

Remarks

Reconsideration is respectfully requested. Claims 1, 3-10, 12-15, 17-24, and 26-34, are in the case. All claims stand rejected.

Claim Amendments

The applicant has amended independent claims 1 and 15 adding language to further highlight the differences between applicant's invention and the references. Support can be found in the drawing figures. No new matter has been added. Claims 3, 7 and 17 have been amended to fix typographical errors. Claim 3 and 7 now depend from claim 1 and claim 17 now depends from claim 15.

Claim Objections

The Examiner has objected to claims 7 and 17 for depending respectively on cancelled claims 2 and 16. The applicant has amended claims 7 and 17 to depend respectively on cancelled claims 1 and 15. Accordingly, applicant respectfully requests the examiner withdraw the objection.

Claim Rejections – 35 USC § 103(a)

The Examiner has rejected claims 1, 3, 6, 8-19, 12-15, 17, 20, 22-30 and 33-34 under 35 USC 103(a) as being unpatentable over Perazzo U.S. Patent No. 6,813,152 in view of Lin et al. U.S. Patent No. 6,752,587 (hereinafter Lin). Applicant respectfully traverses.

Claim 1 currently reads as follows:

1. A modular platform cooling apparatus, comprising:
 - at least one plenum associated with the apparatus; and
 - a first and a second fan module arranged in a side by side relationship
configured to removably and independently engage the plenum, each having first
and second spaced apart side panels, and each being designed to direct an airflow through a bottom of the first and second fan modules and out a

respective rear portion of the first and second fan modules, and each including a plurality of fans arranged in a matrix array of 2xN fans positioned in a N-across by N-deep in-plane relationship wherein N fans are positioned substantially behind N other of the 2xN fans, where N is an integer equal to or greater than 2; and

first and second support members each coupled at opposite ends thereof to the respective first and second side panels wherein the first support member is adapted to support the N fans positioned substantially behind the N other of the 2xN fans, and the second support member is adapted to support the other of the 2xN fans. (underlining added).

And Claim 15 currently reads as follows:

15. A modular platform, comprising:
a plurality of modular platform boards;
at least one plenum coupled to the modular platform; and
a first and a second fan module arranged in a side by side relationship
configured to removably and independently engage the plenum, each having first and second spaced apart side panels, and each being designed to direct an airflow through a bottom of the first and second fan modules and out a respective rear portion of the first and second fan modules, and each including a plurality of fans arranged in a matrix array of 2xN fans positioned in a N-across by N-deep in-plane relationship wherein N fans are positioned substantially behind N other of the 2xN fans, where N is an integer equal to or greater than 2; and

first and second support members each coupled at opposite ends thereof to the respective first and second side panels wherein the first support member is adapted to support the N fans positioned substantially behind the N other of the 2xN fans, and the second support member is adapted to support the other of the 2xN fans. (underlining added).

Respectfully, to reject the claims in an application under Section 103 the Examiner's analysis must comply with the obviousness analysis required by Section 103 as interpreted by the Court. It is well settled that in obviousness rejections, the Examiner is to:

- 1) view the invention as a whole,
- 2) identify the difference with the prior art,

- 3) identify those of ordinary skill in the art, and
- 4) determine whether those of ordinary skill in the art will be motivated to make the modification to the prior art to arrive at the claimed invention.

When the invention as claimed is viewed as a whole and Perrazo and Lin are viewed on their whole the differences are quite clear.

In addition, there is no suggestion provided in the reference that would motivate one skilled in the art to modify the references, taken alone or together, to arrive at applicant's invention as claimed.

Applicant claims

...a first and a second fan module arranged in a side by side relationship...
... each [module] having first and second spaced apart side panels...
... each [module] including a plurality of fans arranged in a matrix array of 2xN fans positioned in a N-across by N-deep in-plane relationship wherein N fans are positioned substantially behind N other of the 2xN fans; and
... first and second support members each coupled at opposite ends thereof to the respective first and second side panels wherein the first support member is adapted to support the N fans positioned substantially behind the N other of the 2xN fans, and the second support member is adapted to support the other of the 2xN fans.

Perrazzo

Perrazzo teaches a method for improving airflow by offsetting fans within a fan module. According to Perrazzo, offsetting the fans provides "an open area 26 behind fan 14 through which airflow fan 14 can continue in the event of failure of fan 16." Column 4 lines 47-49. Perrazzo's objective is to keep a disable fan from obstructing the flow of other fans in a module.

Perrazzo teaches plural fans in fan module. Within the module the fans are purposely offset. The fans are not positioned substantially behind one another. In fact Perrazzo teaches away from positioning fans substantially behind one another. In fact, to put Perrazzo's fans substantially behind one another would change the principle of operation of Perrazzo. Therefore, the reference is not sufficient to render the claims prima facie obvious. *In re Ratti* 270 F.2d 810 (CCPA 1959).

Lin

Lin teaches "...a modular fan assembly mounted in an electronic device", which "comprises a frame having a defined opening for air circulation; at least two spaced apart fans disposed within the frame," Col. 1 lines 63-66. Lin further teaches "an identical second modular fan assembly formed [in] tandem with the modular fan assembly." Col. 2 line 9-11(underlining added). This is illustrated in Lins' FIG. 4, wherein 2 module assemblies are arranged one behind the other. FIG. 5 of Lin also teaches spaced apart fans in each module assembly. The other elements in the bottommost modular assembly in FIG. 5 are redirecting vanes, i.e. they are not additional fans within the same module assembly. They are intended to merely redirect the air before it goes from one module to the next module. Within each of Lin's modular fan assembly Lin teaches side by side fans, not fans positioned substantially behind one another. Column 3 lines 53-59 of Lin makes this clear wherein is says:

"In operation, air is sucked into the front opening prior to leaving the second opening by passing through two parallel sets of the fans 12 and 14 wherein in each set of the fans 12 and 14 the brought in fresh air is first set up by the blades 122 to form a current of air which is in turn guided by the vanes 123 prior to passing through the blades 142 of the fan 14."

Lin does not teach or suggest, in a single module "a plurality of fans arranged in a matrix array of 2xN fans positioned in a N-across by N-deep in-plane relationship wherein N fans are positioned substantially behind N other of the 2xN fans". As claimed by Applicant. In addition there is no suggestion by Lin to place individual modules "in a side by side relationship". As claimed by Applicant.

Further, not all limitations are met by the references, whether taken alone, or in combination. For example neither reference teaches, or suggests:

"... first and second support members each coupled at opposite ends thereof to the respective first and second side panels wherein the first support member is adapted to support the N fans positioned substantially behind the N

other of the 2xN fans, and the second support member is adapted to support the other of the 2xN fans."

As claimed by applicant.

In the instant case, those of ordinary skill in the art would not be motivated by the prior art standing alone to make the modifications necessary to arrive at the claimed invention. Even if such motivation existed, to try and combine the references, applicant's invention as claimed would not result, as all the limitations, as claimed can not be found, in the sum of the references' teachings.

Therefore claims 1 and 15 in there current state define patentably over Perrazzo and Lin, and are in condition for allowance. Allowance is respectfully requested.

Claims 3, 6, 8-19, 12-14, 17, 20, 22-30 and 33-34 depend from and include all of the limitations of respective base claims 1 and 15. Therefore, claims 3, 6, 8-19, 12-14, 17, 20, 22-30 and 33-34 should also be allowable. Allowance is respectfully requested.

The Examiner has rejected claims 4 and 18 under 35 USC 103(a) as being unpatentable over Perazzo U.S. Patent No. 6,813,152, in view of Lin et al. U.S. Patent No. 6,752,587, as applied and further in view of Yoshikawa U.S. Patent No. 6,222,729. Applicant respectfully traverses. At least by virtue of their direct or indirect dependence on claims 1 or 15, claims 4 and 18 should be found allowable. Reconsideration of the examiners rejection and allowance of the claims is respectfully requested.

The Examiner has rejected claims 5 and 19 under 35 USC 103(a) as being unpatentable over Perazzo U.S. Patent No. 6,813,152, in view of Lin et al. U.S. Patent No. 6,752,587, as applied and further in view of Dent U.S. Patent No. 6,537,019. Applicant respectfully traverses. At least by virtue of their direct or indirect dependence on claims 1 or 15, claims 5 and 19 should be found allowable. Reconsideration of the examiners rejection and allowance of the claims is respectfully requested.

The Examiner has rejected claims 7 and 21 under 35 USC 103(a) as being unpatentable over Perazzo U.S. Patent No. 6,813,152, in view of Lin et al. U.S. Patent No. 6,752,587, as applied and further in view of Houdek U.S. Patent No. 6,406,257.

Applicant respectfully traverses. At least by virtue of their direct or indirect dependence on claims 1 or 15, claims 7 and 21 should be found allowable. Reconsideration of the examiners rejection and allowance of the claims is respectfully requested.

The Examiner has rejected claims 31 and 32 under 35 USC 103(a) as being unpatentable over Perazzo U.S. Patent No. 6,813,152, in view of Lin et al. U.S. Patent No. 6,752,587, as applied in view of Negishi U.S. Patent No. 6,421,238. Applicant respectfully traverses. At least by virtue of their direct or indirect dependence on claims 1 or 15, claims 31 and 32 should be found allowable. Reconsideration of the examiners rejection and allowance of the claim is respectfully requested.

Conclusion

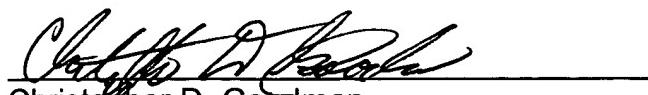
Applicant submits all the claims in the present application, specifically claims 1, 3-10, 12-15, 17-24, and 26-34, are in condition for allowance. Reconsideration of the examiners objections and rejections, and issuance of a Notice of Allowance is respectfully requested.

If the Examiner has any questions, he is invited to contact the undersigned at (503) 796-2496.

The Commissioner is hereby authorized to charge shortages or credit overpayments to Deposit Account No. 500393.

Respectfully submitted,
SCHWABE, WILLIAMSON & WYATT, P.C.

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Christopher D. Goodman,
Registration No. 34,338

Pacwest Center, Suite 1900
1211 SW Fifth Avenue
Portland, Oregon 97204
Telephone: 503-222-9981